**Abstract**

**Background**: Memory complaint in the absence of organic pathology is a common phenomenon accounting for up to one third of patients presenting to memory clinics. Health anxiety has been specifically linked to dementia worry and repeated presentations to the National Health Service (NHS). Providing reassurance that an individual does not have dementia appears ineffective in reducing presentations to primary and secondary care services.

**Aims**: This study sought to evaluate and establish the effectiveness of a 1-hour pilot training workshop to enhance healthcare professionals knowledge and confidence to those with health anxiety around cognitive decline.

**Method**: The one-session pilot training workshop was developed and informed by previous work and consultation with the 2Gether NHS Foundation Trust Memory Assessment Service staff. The training workshop was then evaluated by employing an idiosyncratic self-report questionnaire. Participants completed the questionnaire prior to and after the training workshop.

**Results**: Pre- and post-training questionnaires revealed that the pilot training workshop was effective in increasing perceived knowledge and confidence in staff responding to patients presenting with health anxiety and co-occurring subjective memory complaints.

**Conclusions**: The findings suggest that healthcare professionals may benefit from training in identifying and addressing health anxious individuals with subjective memory complaints. This may have implications in the provision of psychologically-informed care offered in memory services. Recommendations are made for further enhancing the effectiveness of staff training and promoting alternative service treatment pathways.

*Keywords*: clinical neuropsychology, memory assessment service, subjective memory complaints, health anxiety, service evaluation

**Introduction**

Memory complaint in the absence of organic pathology and objective cognitive impairment is a common phenomenon that accounts for up to one third of patients with a median age of 40, ranging from 37 to 44 years, presenting to memory clinics (Carson et al., 2000).

Defined as subjective memory complaints (SMCs), a recent review has revealed that 46.3% of adults aged 50 to 59 and 63.4% of elderly patients 80-100 years old experience SMCs (Brigola et al., 2015), while previous findings have also suggested that SMCs are as common in young adults under 50 years of age (Derouesné et al., 1999). Several studies have shown the presence of these complaints as predictors of future mild cognitive impairment and Alzheimer’s disease (Jessen et al., 2010; Peters et al., 2019). Furthermore, SMCs have often been associated with psychiatric disorders (Aleman et al., 1999; Balash et al., 2013; Bartley et al., 2012; Dorahy, 2001; Plotkin et al., 1985; Vasterling et al., 1998), personality traits, such as neuroticism (Reid & Maclullich, 2006; Steinberg et al., 2013), and poor physical health (Begum et al., 2012; Jorm et al., 2004). However, complains about memory deficits are also reported by healthy individuals, as previously found in Metternich et al.’s study (2009), where a group of patients, mean (*SD*) age 55.05 (8.11) years, reported memory complaints in the absence of abnormal neuropsychology. A stereotypical pattern of difficulties with concentration, memory encoding and prospective memory retrieval are reported despite performing in the normal range on neuropsychological testing (Berrios et al., 2000; Schmidtke, 1995).

This patient group is the most costly for outpatient clinics in the National Health Service (NHS) with patients repeatedly visiting their General Practitioner up to four times per year (Verhaak et al., 2006). Few deteriorate towards dementia (Glodzik-Sobanska et al., 2007), a syndrome characterised by the progressive impairment of brain functioning also affecting younger people aged below the cut-off age of 65 (Rossor et al., 2010); yet the cost of hospital appointments and continuous medical investigations are significantly larger than for frequent attenders with organic symptoms (Reid et al., 2002). Many individuals experience enormous distress and the disabling outcomes of a memory disorder with organic pathology, such as impaired functioning in activities of daily living, taking time off work or losing employment conveying further socioeconomic costs and also the impact of symptoms on the patient’s wellbeing (Carson et al., 2000; Creed et al., 2011).

Health anxiety is characterised by a person’s preoccupation with the belief that they have a serious illness due to an enduring tendency to misinterpret ambiguous bodily sensations as sinister symptoms (Abramowitz et al., 2007; Barsky & Ahern, 2004). Evidence suggests that health anxiety is clinically significant in patients with several medical conditions, who show an attentional bias towards body cues that lead to an overestimation of the cost and probability of the feared event (Clark, 1999). This contributes to the high prevalence of health anxiety over time, which has a profound effect on the quality of life of those with medical conditions; therefore, making health anxiety an important target for treatment to benefit such individuals. The incidence of health anxiety in neurology clinics has been reported as 24.7%; high in comparison to 20.9% in respiratory medicine and 19.5% in gastroenterology (Tyrer et al., 2011). Health anxiety in neurology has been specifically linked to subjective cognitive decline and dementia worry as it creates a state of chronic internal distractedness and reduced capacity to maintain attention for encoding and retrieving memories (Kessler et al., 2014; Schmidtke et al., 2008). When the individual becomes aware of this difficulty, their memory-related self-efficacy is reduced, generating a vicious cycle of increased anxiety and further reduced capacity to maintain attention (Ponds & Jolles, 1996). Anxiety is enhanced for individuals with exaggerated memory-related achievement motivation or with a family history of severe illness (Metternich et al., 2009; Salkovskis & Warwick, 1986), causing the individual to catastrophize memory difficulties as symptoms of dementia.

Repeated presentation to the NHS may reflect that in the absence of organic pathology, patients are often reassured they do not have dementia (Stone et al., 2005). Reassurance can have a transient effect on reducing health anxiety; however, appears to elevate long-term anxiety and leads to seeking reassurance from other medical professionals (Salkovskis & Warwick, 1986). Crucially, reassurance seeking appears to reduce trust in the individual’s own memory and strengthens negative cognitions of why the symptom is present (Rachman et al., 1976; Radomsky & Alcolado, 2010). The patient’s negative thought bias results in focusing anxiety on dissatisfaction with the lack of medical diagnosis and investigations carried out (Salkovskis & Warwick, 1986). Stone et al. (2005) add to this argument by stating that reassurance can leave the patient feeling their symptoms have not been given credence. Instead, Stone and Evans (2011) highlight that symptomatic diagnoses may serve as a useful alternative by explaining what the patient does experience and why the symptoms do occur, allowing patients to make sense of their symptoms collaboratively with the healthcare professional.

A recent study provides valuable insight into the systemic barriers to breaking the cycle of reassurance seeking (Daniels et al., 2018). Firstly, staff perceptions in an emergency department included that those presenting with health anxiety were ‘attention seeking’ and presented with ‘inappropriate help-seeking behaviour’. Secondly, medical professionals reported adopting a ‘better safe than sorry’ culture where full investigations were carried out despite a lack of evidence suggesting organic pathology. Lastly, there were inadequate resources to identify or respond to this clinical population. The study concluded a systemic, multi-disciplinary approach involving clear treatment pathways, screening tools and improving staff confidence in responding to this patient group would be valuable in reducing repeated presentations. Furthermore, the study describes huge cost savings of offering frequent attenders a psychological intervention.

Staff training has been demonstrated to increase knowledge and confidence within healthcare settings and these are factors recognised to contribute towards improved work performance and clinical outcomes (Allen et al., 1997; Dench, 2005; McDonnell et al., 2008; Hughes et al., 2008; Lowe et al., 2007; Stuhlmiller et al., 2004). Staff training also appears to positively impact staff attitudes towards patients with medically unexplained symptoms, albeit this effect may be transient (Lowe et al., 2007). Transient effects may be attributable to training alone being insufficient in bringing about enduring change (Ziarnik & Berstein, 1982), in particular when support from management in implementing the training content is absent (Page et al., 1982).

**Rationale and objectives**

There is a compelling evidence base highlighting that health anxiety is common and costly within neurology clinics, that providing reassurance is likely to exacerbate health anxiety and that there are many barriers to breaking cycles of reassurance seeking and repeated presentations to NHS services. Staff training is a useful way to provide a systemic, multi-disciplinary approach in responding to patient groups where staff lack confidence in responding effectively. A growing body of evidence reports far reaching benefits of training programs, including brief training interventions across some clinical specialties, however, no studies have developed or tested staff interventions in the neurology setting. For this reason, this study aims to evaluate the effectiveness of a single-session pilot training workshop on health anxiety to increase staff knowledge and confidence.

**Ethical approval**

The study was given favourable opinion by the University of Bath Psychology Research Ethics Committee (ref: 19-168) and approved by the 2Gether NHS Foundation Trust’s Research and Development (ref: 19/023/2GTSE).

**Method**

**Design**

A repeated measures questionnaire-based design was used. Staff were invited to rate items on a questionnaire before and after the training workshop in order to evaluate the degree to which the workshop increased their perceived knowledge and confidence in providing psychologically-informed care to those presenting with health anxiety.

**Participants**

All healthcare professionals working within the regional Memory Assessment Service were invited via email to attend a pilot training workshop. Thirty two of 42 professionals attended the training (76%) from four localities within the Memory Assessment Service participated. The participants were Psychiatrists (*n* = 12), Nurses (*n* = 6), Clinical Psychologists (*n* = 7), Trainee Clinical Psychologists (*n* = 2), Assistant Psychologists (*n* = 1) and Occupational Therapists (*n* = 4). All participants completed the questionnaire before and after training representing a 100% response rate, therefore the data collected can be considered a reliable reflection of the sample recruited.

**Materials**

An idiosyncratic self-report questionnaire was purposefully developed to evaluate the effectiveness of the pilot training workshop, specifically addressing self-ratings of perceived knowledge and confidence as these are factors known to improve clinical outcomes. Consultation with a Clinical Psychologist working within the field and an individual with personal experience of health anxiety around cognitive decline was used to ensure the questionnaire developed had face validity.

Data was collected to report descriptive statistics of the staff member’s locality and discipline (as reported above) but otherwise data was anonymous to encourage honest and constructive feedback. The questionnaire asked participants to rate their knowledge and confidence around providing psychologically-informed care to patients presenting with health anxiety on a five point scale (1 = little knowledge/confidence; 5 = great knowledge/confidence) for five items. The five items specifically asked participants to rate 1) their knowledge of reassurance seeking reinforcing health anxiety, 2) their confidence in identifying patients with health anxiety, 3) their belief in the usefulness of reassuring patients with health anxiety of what they do not have, 4) their confidence in sharing symptomatic diagnoses and 5) their confidence in sharing symptomatic diagnoses. The questionnaire was designed to be administered before and after the training workshop and utilised Likert Scales given that they have been demonstrated to be both reliable and valid (Croasmun & Ostrom, 2011). The questionnaire also provided a space for participants to comment on their experience of working with patients with health anxiety prior to the workshop and to comment on the most or least useful aspects of the training workshop afterwards.

**Procedure**

A 1-hour pilot training workshop was developed based on the principles of the Salkovskis & Warwick (1986) model of health anxiety, and informed by the work of Tyrer and colleagues (2011). A consultation process with the service commissioner and representatives from each profession informed the refinement of the workshop to ensure it was addressing staff training needs. A Clinical Neuropsychologist with expertise in this field and an individual with personal experience of health anxiety around cognitive decline were also consulted as part of the development of the training. The workshop was delivered by a Trainee Clinical Psychologist .

Participants were invited to attend the workshop during their monthly team meeting and were asked to complete the self-report questionnaire immediately before and after the workshop by providing written responses. Pre- and post- questionnaires were given in a printed booklet with clear instructions of the items to rate before and after the workshop, allowing for the data to be paired for analyses.

**Intervention targets**

Intervention targets were aimed to increase the self-ratings of the following domains after the 1-hour pilot training workshop, in comparison to before the workshop:

1) perceived knowledge of the impact of providing reassurance to patients that experience health anxiety around cognitive decline;

2) perceived confidence in identifying patients with health anxiety around cognitive decline;

3) perceived confidence in sharing symptomatic diagnoses with patients experiencing health anxiety;

4) perceived confidence in signposting patients experiencing health anxiety towards psychological intervention.

Intervention targets were also focussed on 5) decreasing ratings of perceived usefulness of providing reassurance to those experiencing health anxiety following delivery of the training workshop, in comparison to before the workshop.

**Data analyses**

Kolmogorov-Smirnov tests revealed that the questionnaire data was not normally distributed and therefore did not meet parametric assumptions. Consequently, non-parametric tests were used throughout data analyses. Wilcoxon Signed Ranks tests were used to compare ratings from the questionnaires before and after the training workshop given a repeated measures design was used. Group comparisons across localities and discipline were not possible due to the small sample size. Thematic analysis following Braun and Clarke’s (2006) protocol was also used to analyse the qualitative data collected and a second researcher completed an analysis to ensure the qualitative trustworthiness of the themes, as recommended by Elliot et al.’s (1999) protocol. Any differences were discussed before final themes were agreed upon.

**Results**

**Descriptive statistics**

An increase in mean ratings of knowledge and confidence from pre-workshop to post-workshop was observed across all relevant questionnaire items (Table 1), with mean pre-workshop knowledge and confidence ratings ranging from 3.47 to 3.72 (out of a possible 5) and mean post-workshop knowledge and confidence ratings ranging from 4.06 to 4.41. There was a decrease in the perceived usefulness of providing reassurance to those experiencing health anxiety from a pre-workshop mean of 3.5 to a post-workshop mean of 2.91.

**Inferential statistics**

A series of Wilcoxon Signed-Ranks tests revealed statistically significant differences between pre- and post-workshop self-ratings of perceived knowledge and confidence on all relevant items of the questionnaire (Table 1), conveying that the pilot training workshop was effective. Participants self-reported an increase in perceived knowledge of the impact of providing reassurance to those experiencing health anxiety and an increase in perceived confidence in identifying patients with health anxiety, sharing symptomatic diagnoses and signposting patients towards psychological intervention. Participants rated providing reassurance to those with health anxiety as less helpful following the training workshop.

**Pre-workshop thematic analysis**

Only sixteen of the 32 participants provided qualitative comments pre-workshop, demonstrating a 50% completion rate of this questionnaire item. Two themes were agreed upon: ‘limited experience of working with health anxiety’ and ‘attitudes that health anxiety is difficult to work with’.

***Limited experience of working with health anxiety***

Many participants reported “limited” (P5, P8, P14, P17, P21, P24) or a “small” (P6, P18, P19, P21) amount of experience of working with health anxiety pre-workshop. Some staff reported experience of working with “medically unexplained symptoms” (P10, P23).

P8: I have quite limited experience of working with health anxiety. It’s a phrase I’ve heard a lot and I’ve probably come across lots of people with it but I’m not sure I know the signs to look out for.

***Attitudes that health anxiety is difficult to work with***

Participants reported common attitudes that health anxiety can be “difficult” (P5, P17, P19, P21) to work with, that it can be difficult to collate an “objective clinical history” (P8, P24) and that staff had a lack of “confidence” (P5, P7, P14, P17) in talking about health anxiety in relation to memory difficulties.

P19: I’ve not directly worked with health anxiety myself but when it is talked about in team meetings, I get a sense of resistance from other people as if it’s quite a difficult presentation to work with.

**Post-workshop thematic analysis**

Again, only eighteen of the 32 participants provided qualitative comments post-workshop, demonstrating a 56% completion rate of this questionnaire item. Five themes were agreed upon: ‘the workshop content was helpful’, ‘increased awareness of health anxiety’, ‘alternative treatment pathways, ‘the need for further training’ and ‘resource constraints’.

***The workshop content was helpful***

Almost all participants that completed this questionnaire item commented that the training workshop was helpful. Additionally, participants commented that the workshop content was “thought provoking” (P14), “relevant” (P14, P21, P23) and “interesting” (P6, P17, P18, P24) with particularly useful aspects being how to formulate the clinical history in combination with the cognitive profile on the Addenbrooke’s Cognitive Examination III (ACE III) and “understanding the cognitive model of health anxiety” (P17, P19) in relation to memory difficulties.

P10: It was really useful to understand how people with health anxiety perform on the ACE-III and I will definitely look out for this profile when I think a patient is anxious about their health from their clinical history. I’m not sure we as a team talk enough about the specific errors made on the ACE-III as we often talk about the domain scores but I can really see a value in doing this now.

***Increased awareness of health anxiety***

Many participants commented the team will be “more aware” (P7, P10, P17, P21) of health anxiety and that staff would feel “able to share” (P18, P19) aspects of the training with other clinicians and patients. Members of the psychology team acknowledged responsibility to “facilitate” (P2) and “integrate” (P9) discussions around this topic within the multidisciplinary team meetings.

P17: This training has definitely helped me to understand more about health anxiety and I think as a team we can now be more aware and responsive to patients that request repeat assessments.

***Alternative treatment pathways***

Some participants commented that they are now able to consider “alternative formulations” (P1, P19) and “treatment pathways” (P2, P9) for this clinical population. One clinician in particular reported a “lightbulb” (P8) moment where they were able to identify aspects of their own clinical practice that may have been unhelpful in responding to those presenting with health anxiety.

P18: The bit about formulation was really useful. Understanding the process contributing to the problem means we can think about more helpful ways to help this group.

***The need for further training***

There was common consensus that health anxiety was “a big subject to cover” (P14) in one hour and that it would be helpful “to receive more training” (P18, P24). In particular, participants wanted more time to think about how to “make sense of symptoms” (P19) and “validate distress” (P10) and to think about how to respond to health anxiety when it presents “alongside pre-existing physical health conditions” (P6). Furthermore, one participant said that “a one-sided information sheet with examples of what to say” (P14) would further improve staff confidence during memory assessments and communicating symptomatic diagnoses.

P10: I’d really like more training on this area. I’d be nervous that I don’t know quite enough or feel confident enough that I wouldn’t want to say something offensive. It would be helpful to have more training and practice around these conversations so that we validate distress rather than increase it even further.

***Resource constraints***

Barriers to implementing the training workshop content were communicated by some participants. It was communicated that implementation may be limited by the “lack of services and psychology provision available” (P5) or “limited access to psychological therapies” (P8) with “a need for a change in service delivery” (P1) suggested. There were common views that it was difficult to know where to refer individuals to because of the lack of post-diagnostic psychology provision within the Memory Assessment Service. Furthermore, there was acknowledgement that primary care psychology provision such as Increasing Access to Psychological Therapies (IAPT) services are “not equipped to provide CBT for health anxiety within the context of memory difficulties” (P2), further emphasising the need for greater post-diagnostic psychology provision for this clinical population within secondary care memory assessment services.

P6: I think it may be difficult to know where to signpost patients as there are just no services adequately equipped to respond to these mental health needs, and without good evidence and a change in psychology provision post-diagnosis this service doesn’t have capacity to offer CBT (Cognitive Behavioural Therapy).”

**Recommendations**

It is evident from this study that services may not be informed about clinical models of health anxiety (including reassurance seeking) and/or the resources available to them. The following recommendations are made:

1) MAS teams should be provided with regular training around responding to patients presenting with anxiety (and specifically health anxiety) within the context of memory difficulties, this would include appropriate pathways and services available;

2) The use of a health anxiety screening tool, such as the Health Anxiety Inventory (Salkovskis et al., 2002), should be used to guide clinical decision-making;

3) MAS teams should develop patient information sheets on health anxiety, supporting both staff and patients during memory assessments when screening for health anxiety;

4) Use of the Addenbrooke’s Cognitive Examination III (Mathuranath et al., 2000) cognitive profile should be considered for use as a tool for informing whether memory difficulties are organic in nature. This involves looking at the pattern of scores within each cognitive domain as opposed to just looking at the scores for each cognitive domain.

5) Patient’s presenting with suspected health anxiety should be reviewed within an MDT team, considering treatment pathways available and a cost-benefit analysis of further investigations e.g. whether this is necessary or may unnecessarily exacerbate the patient’s health anxiety; and which clinician might be most appropriate to feed this back to the patient.

**Discussion**

This study evaluated and established the effectiveness of a one-session training workshop which aimed to improve knowledge and confidence in health anxiety, both in terms of clinical understanding but with respect to the resources and pathways available to this subset of patients. The National Institute for Health and Care Excellence (NICE) guidelines (2018) state the importance of assessing cognitive, behavioural and psychological symptoms within a dementia assessment conveying that assessments should be psychologically-informed in their approach. The guidelines also state a psychological intervention should be offered to those experiencing a memory impairment and co-occurring anxiety. In order to resource the staff team to meet the requirements of NICE guidelines and to provide psychologically-informed care, a pilot training workshop was developed incorporating content to improve knowledge and confidence whilst also providing screening tools and signposting resources. The training workshop also supports teams to meet The Memory Services National Accreditation Programme (MSNAP) standards by ensuring the team receiving training in the use of cognitive assessment and screening tools (Royal College of Psychiatrists, 2022). The findings demonstrate a training workshop can improve perceived knowledge and confidence in identifying and assessing individuals that present with health anxiety. These are factors recognised to positively impact work performance, clinical outcomes and staff attitudes towards patients that present with medically unexplained symptoms (Hughes et al., 2008; Lowe et al., 2007). Albeit only half of participants completed qualitative feedback and this must be considered when interpreting the identified themes, the qualitative data suggests that consulting with the service in the development of the training content may have contributed to the effectiveness of the training workshop by making it ‘relevant’ to the staff training needs.

Following the provision of screening tools and training on the stereotypical cognitive profile observed when experiencing health anxiety (Schmidtke, 1995), staff reported improved confidence to identify individuals presenting with health anxiety using clinical interviews, screening tools and cognitive assessment. It should be noted that screening tools are useful indicators of distress that meet clinical thresholds, however should be interpreted within the context of other relevant factors to a thorough assessment. The current service treatment pathway involves reassuring individuals that they do not have dementia, however the evidence base suggests providing reassurance is unhelpful for those that present with health anxiety and sharing a symptomatic diagnosis may be more helpful. The healthcare professional’s improved confidence in identifying individuals experiencing health anxiety opens an opportunity to respond differently and create an alternative treatment pathway for this clinical population, and the observed improved confidence in communicating symptomatic diagnoses and signposting to appropriate services will support this. Moreover, although the 1-hour training workshop was informed by current health anxiety models, it may be also beneficial to incorporate culturally sensitive aspects to facilitate more culturally informed pathways for patients from different backgrounds presenting to memory clinics.

Cognitive Behavioural Therapy (CBT) has been demonstrated to be both clinically and cost effective in reducing health anxiety in medical settings (Tyrer et al., 2014); therefore identifying patients with health anxiety around cognitive decline and signposting them towards psychological intervention is key in reducing patient distress. CBT aims to reduce anxiety by supporting individuals to discover a less threatening explanation for their experience and therefore sharing a symptomatic diagnosis is consistent with a CBT approach; for some this may be enough to reduce health anxiety around cognitive decline. However, anxiety will persist for others and signposting these individuals for CBT is likely to be fundamental in reducing repeated presentations to the service and subsequent costs, whilst also reducing patient distress and improving quality of life.

A lack of post-diagnostic psychology provision highlights a need for memory assessment services to demonstrate the clinical and cost-effectiveness of providing psychological intervention post-diagnosis in order to change the structure of current treatment pathways. Given the high incidence of health anxiety in neurology, there is an evident unmet clinical need and this need is not currently being met by primary care mental health services. There is a need for secondary care to provide post-diagnostic psychological intervention or to provide consultation to primary care services around how to deliver an intervention that meets the need of those with health anxiety around cognitive decline.

Alternative treatment pathways offer the opportunity to overcome systemic barriers to breaking the cycle of reassurance seeking, such as the ‘better safe than sorry’ culture. The training workshop improved staff insight into how reassurance can exacerbate health anxiety and elicited interesting discussion about how the healthcare professionals may use their multidisciplinary meetings to discuss patients and consider whether further investigations are always necessary in the absence of evidence for organic pathology. Further training, coupled with provision of screening tools and signposting resources, may help in reducing repeated presentations to the service. However, this cannot be assumed and would need to be empirically evaluated in the future.

**Limitations**

Although the findings of this study are promising with regards to improved knowledge and confidence, it cannot be assumed that these findings will generalise to changes in clinical practice without this being further evaluated. Only 50% of participants provided qualitative feedback following the pilot training workshop and therefore the positive responses may not be reflective of the entire sample recruited. It must also be acknowledged that there are wider systemic constraints on services that may limit changes in clinical practice.

This study was also not sufficiently powered to explore differences between localities and disciplines making it difficult to conclude whether all localities and disciplines benefitted from the training workshop to an equal extent. Additionally, albeit health anxiety is commonly observed across neurology clinics (Tyrer et al., 2011), the findings of this study cannot be generalized to all memory assessment services. Implementation and evaluation of similar training is needed across neurology clinics and disciplines to demonstrate its effectiveness, especially given the possibility of bias impacting the training delivery and evaluation.

It should be noted that the outcome measure used in this study had not been previously standardised and therefore its internal reliability and external validity cannot be assumed in spite of its demonstrated face validity. Larger scales may have also been useful in allowing for a greater spread of data and may have been more informative in observing pre-workshop and post-workshop differences.

**Suggestions for further research**

The staff appeared motivated to consider changes to the current treatment pathway, opening up the opportunity for further research to be carried out. It was recognised that implementation of additional resources to respond appropriately to this clinical group would require an evidence base suggesting its cost-effectiveness; nevertheless, it was acknowledged that there are several changes that are less resource-heavy. For this reason, it would be useful to conduct further research evaluating whether changes to the service treatment pathway, for example sharing symptomatic diagnoses and reducing repeated assessments in the absence of evidence suggesting organic pathology, reduces repeated presentations to the service and associated costs. As such, research would also need to gain a deeper insight into the role that family members may have in exacerbating health anxiety over time, investigating their role with particular regards to reassurance seeking behaviours.

This research may be useful in supporting the provision of training around health anxiety in memory services and may also influence other memory assessment services to change their clinical practice. Replicating the present findings, by refining the content of the workshop to co-create with dementia staff, may be beneficial to offer the potential for change when dealing with patients experiencing a memory impairment and co-occurring health anxiety. It would also be important to evaluate patient distress as a result of changes to the service treatment pathway in order to demonstrate that responding differently to these patients may also improve their health-related quality of life.

Lastly, given the profound impact of culture on health anxiety, cultural factors are also noteworthy to take into account to develop culturally sensitive pathways to care for minority groups presenting to memory clinics. Considering the applicability of such a training workshop in larger, multicultural areas, compared to Gloucestershire, would be helpful to further advance our understanding regarding staff improved knowledge and confidence as well as patients’ experience of memory services, especially if from different cultural backgrounds.

**Conclusions**

This study provides evidence of the benefits training may have on healthcare professionals to improve the provision of psychologically-informed care to those presenting with health anxiety in a memory assessment service. Further research is needed to understand the patient experience of this pathway, and whether staff training positively impacts repeat attendance.

**Ethical statements**

Ethical approval was granted by the Department of Psychology, Research Ethics Committee at the University of Bath (PREC reference number: 19-168). The study was approved by the 2Gether NHS Foundation Trust’s Research and Development (reference number: 19/023/2GTSE). Any necessary informed consent to participate and for the results to be published has been obtained. The authors have abided by the Ethical Principles of Psychologists and Code of Conduct as set out by the BABCP and BPS.

**References**

**Abramowitz, J. S., Olatunji, B. O., & Deacon, B. J.** (2007). Health anxiety, hypochondriasis, and the anxiety disorders. *Behaviour Therapy, 38*(1), 86–94. <https://doi.org/10.1016/j.beth.2006.05.001>

**Aleman, A., Hijman, R., de Haan, E. H., & Kahn, R. S.** (1999). Memory impairment in schizophrenia: a meta-analysis. *American Journal of Psychiatry, 156*(9), 1358–1366. <https://doi.org/10.1176/ajp.156.9.1358>

**Allen, D., McDonald, L., Dunn, C. & Doyle, T.** (1997). Changing care staff approaches to the prevention and management of aggressive behaviour in a residential treatment unit for persons with mental retardation and challenging behaviour. *Research in* *Developmental Disabilities, 18*(2), 101–112. [https://doi.org/10.1016/s0891-4222(96)00043-1](https://doi.org/10.1016/s0891-4222%2896%2900043-1)

**Balash, Y., Mordechovich, M., Shabtai, H., Giladi, N., Gurevich, T., & Korczyn, A. D.** (2013). Subjective memory complaints in elders: depression, anxiety, or cognitive decline?. *Acta neurologica Scandinavica*, *127*(5), 344–350. <https://doi.org/10.1111/ane.12038>

**Barsky, A. J., & Ahern, D. K.** (2004). Cognitive behavioural therapy for hypochondriasis. *The Journal of the American Medical Association, 291*(12), 1461–1470. <https://doi.org/10.1001/jama.291.12.1464>

**Bartley, M., Bokde, A. L., Ewers, M., Faluyi, Y. O., Tobin, W. O., Snow, A., Connolly, J., Delaney, C., Coughlan, T., Collins, D. R., Hampel, H., & O'Neill, D.** (2012). Subjective memory complaints in community dwelling healthy older people: the influence of brain and psychopathology. *International journal of geriatric psychiatry, 27*(8), 836–843. <https://doi.org/10.1002/gps.2794>

**Begum, A., Morgan, C., Chiu, C. C., Tylee, A., & Stewart, R.** (2012). Subjective memory impairment in older adults: aetiology, salience and help seeking. *International journal of geriatric psychiatry*, *27*(6), 612–620. <https://doi.org/10.1002/gps.2760>

**Berrios, G. E., Markova, I. S., & Girala, N.** (2000). Functional memory complaints: hypochondria and disorganization. In G. E. Berrios & J. R. Hodges (Eds.), *Memory Disorders in Psychiatric Practice* (pp. 384–99). Cambridge University Press.

**Braun, V., & Clarke, V.** (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>

**Brigola, A. G., Manzini, C. S. S., Oliveira, G. B. S., Ottaviani, A. C., Sako, M. P., & Vale, F. A. C.** (2015). Subjective memory complaints associated with depression and cognitive impairment in the elderly: A systematic review. *Dementia & neuropsychologia*, *9*(1), 51–57. <https://doi.org/10.1590/S1980-57642015DN91000009>

**Carson, A. J., Ringbauer, B., Stone, J., McKenzie, L., Warlow, C., & Sharpe, M.** (2000). Do medically unexplained symptoms matter? A prospective cohort study of 300 new referrals to neurology outpatient clinics. *Journal of Neurology, Neurosurgery & Psychiatry, 68*(2), 207–210. <https://doi.org/10.1136/jnnp.68.2.207>

**Clark, D. M.** (1999). Anxiety disorders: why they persist and how to treat them. *Behaviour research and therapy*, *37 Suppl 1*, S5–S27. [https://doi.org/10.1016/s0005-7967(99)00048-0](https://doi.org/10.1016/s0005-7967%2899%2900048-0)

**Creed, F., Henningsen, P., & Fink, P.** (Eds.). (2011). *Medically Unexplained Symptoms, Somatisation and Bodily Distress: Developing Better Clinical Services*. Cambridge University Press.

**Croasmun, J. T., & Ostrom, L.** (2011). Using Likert-type scales in the socials sciences. *Journal of Adult Education, 40*(1), 19–22. <https://files.eric.ed.gov/fulltext/EJ961998.pdf>

**Daniels, J., Osborn, M., & Davis, C.** (2018). Better safe than sorry? Frequent attendance in a hospital emergency department: an exploratory study. *British Journal of Pain, 12*(1), 10–19. <https://doi.org/10.1177/2049463717720635>

**Dench, C.** (2005). A model for training staff in positive behaviour support. *Tizard* *Learning Disability Review, 10*(2), 24–30. <https://doi.org/10.1108/13595474200500017>

**Derouesné, C., Lacomblez, L., Thibault, S., & LePoncin, M.** (1999). Memory complaints in young and elderly subjects. *International journal of geriatric psychiatry*, *14*(4), 291–301. [https://doi.org/10.1002/(SICI)1099-1166(199904)14:4<291::AID-GPS902>3.0.CO;2-7](https://doi.org/10.1002/%28SICI%291099-1166%28199904%2914%3A4%3C291%3A%3AAID-GPS902%3E3.0.CO;2-7)

**Dorahy, M. J.** (2001). Dissociative identity disorder and memory dysfunction: The current state of experimental research and its future directions. *Clinical Psychology Review, 21*(5), 771–795. [https://doi.org/10.1016/s0272-7358(00)00068-4](https://doi.org/10.1016/s0272-7358%2800%2900068-4)

**Elliot, R., Fischer, C. T., & Rennie, D. L.** (1999). Evolving guidelines for publication of qualitative research studies in psychology and related fields. *British Journal of* *Clinical Psychology, 38*(3), 215–229. <https://doi.org/10.1348/014466599162782>

**Glodzik-Sobanska, L., Reisberg, B., De Santi, S., Babb, J. S., & Pirraglia, E., Rich, K. E, Brys, M., & de Leon, M. J.** (2007). Subjective memory complaints: presence, severity and future outcome in normal older subjects. *Dementia and Geriatric Cognitive Disorders, 24*(3), 177–184.  [https://doi.org/10.1159/000105604](https://psycnet.apa.org/doi/10.1159/000105604)

**Hughes, J., Bagley, H., Reilly, S., Burns, A., & Challis, D.** (2008). Care staff working with people with dementia: training, knowledge and confidence. *Dementia, 7*(2), 227–238. <https://doi.org/10.1177/1471301208091>

**Jessen, F., Wiese, B., Bachmann, C., Eifflaender-Gorfer, S., Haller, F., Kölsch, H., Luck, T., Mösch, E., van den Bussche, H., Wagner, M., Wollny, A., Zimmermann, T., Pentzek, M., Riedel-Heller, S. G., Romberg, H. P., Weyerer, S., Kaduszkiewicz, H., Maier, W., Bickel, H., & German Study on Aging, Cognition and Dementia in Primary Care Patients Study Group.** (2010). Prediction of dementia by subjective memory impairment: effects of severity and temporal association with cognitive impairment. *Archives of general psychiatry, 67*(4), 414–422. <https://doi.org/10.1001/archgenpsychiatry.2010.30>

**Jorm, A. F., Butterworth, P., Anstey, K. J., Christensen, H., Easteal, S., Maller, J., Mather, K. A., Turakulov, R. I., Wen, W., & Sachdev, P.** (2004). Memory complaints in a community sample aged 60-64 years: associations with cognitive functioning, psychiatric symptoms, medical conditions, APOE genotype, hippocampus and amygdala volumes, and white-matter hyperintensities. *Psychological medicine, 34*(8), 1495–1506. <https://doi.org/10.1017/s0033291704003162>

**Kessler, E. M., Sudhof, J. K., & Frolich, L.** (2014). ‘Dementia worry’ in memory clinic patients not diagnosed with organic mental disorder. *International Psychogeriatrics, 26*(6), 1049–1051. <https://doi.org/10.1017/S1041610214000349>

**Lowe, K., Jones, E., Allen, D., Davies, D., James, W., Doyle, T., Andrew, J., Kaye, N., Jones, S., Brophy, S., & Moore, K.** (2007). Staff Training in Positive Behaviour Support: Impact on Attitudes and Knowledge. *Journal of Applied Research in Intellectual Disabilities, 20*(1), 30–40. <https://doi.org/10.1111/j.1468-3148.2006.00337.x>

**Mathuranath, P. S., Nestor, P. J., Berrios, G. E., Rakowicz, W., & Hodges, J. R. (2000).** A brief cognitive test battery to differentiate Alzheimer's disease and frontotemporal dementia. *Neurology*, *55*(11), 1613-1620.

**McDonnell, A., Sturmey, P., Oliver, C., Cunningham, J., Hayes, S., Galvin, M., Walsche, C., & Cunningham, C.** (2008). The effects of staff training on staff confidence and challenging behaviour in services for people with autism spectrum disorders. *Research in Autism Spectrum Disorders, 2*(2), 311–319. <https://doi.org/10.1016/j.rasd.2007.08.001>

**Metternich, B., Schmidtke, K., & Hüll, M.** (2009). How are memory complaints in functional memory disorder related to measures of affect, metamemory and cognition? *Journal of Psychosomatic Research, 66*(5), 435–444. <https://doi.org/10.1016/j.jpsychores.2008.07.005>

**National Institute for Health and Care Excellence.** (2018, June 20). *Dementia: assessment, management and support for people living with dementia and their carers*. <https://www.nice.org.uk/guidance/ng97/chapter/Recommendations#diagnosis>

**Page, T., Iwata, B. A., & Reid, D. H.** (1982). Pyramidal training: a large-scale application with institutional staff. *Journal of Applied Behaviour Analysis, 15*(3), 335–351. <https://doi.org/10.1901/jaba.1982.15-335>

**Peters, R., Beckett, N., Antikainen, R., Rockwood, K., Bulpitt, C. J., & Anstey, K. J.** (2019). Subjective memory complaints and incident dementia in a high risk older adult hypertensive population. *Age and ageing, 48*(2), 253–259. <https://doi.org/10.1093/ageing/afy193>

**Plotkin, D. A., Mintz, J., & Jarvik, L. F.** (1985). Subjective memory complaints in geriatric depression. *American Journal of Psychiatry, 142*(9), 1103–1105. <https://doi.org/10.1176/ajp.142.9.1103>

**Ponds, R. W. H. M., & Jolles, J.** (1996). Memory complaints in elderly people: the role of memory abilities, metamemory, depression, and personality. *Educational Gerontology, 22*(4), 341–357. <https://doi.org/10.1080/0360127960220404>

**Rachman, S. J., de Silva, P., & Roper, G.** (1976). The spontaneous decay of compulsive urges. *Behaviour Research and Therapy, 14*(6), 445–453. [https://doi.org/10.1016/0005-7967(76)90091-7](https://doi.org/10.1016/0005-7967%2876%2990091-7)

**Radomsky, A. S., & Alcolado, G. M.** (2010). Don’t even think about checking: Mental checking causes memory distrust. *Journal of Behaviour Therapy and Experimental Psychiatry, 41*(4), 345–351. <https://doi.org/10.1016/j.jbtep.2010.03.005>

**Reid, L. M., & Maclullich, A. M.** (2006). Subjective memory complaints and cognitive impairment in older people. *Dementia and geriatric cognitive disorders, 22*(5-6), 471–485. <https://doi.org/10.1159/000096295>

**Reid, S., Wessely, S., Crayford, T. I. M., & Hotopf, M.** (2002). Frequent attenders with medically unexplained symptoms: service use and costs in secondary care. *The British Journal of Psychiatry, 180*(3), 248–253. <https://doi.org/10.1192/bjp.180.3.248>

**Rossor, M. N., Fox, N. C., Mummery, C. J., Schott, J. M., & Warren, J. D.** (2010). The diagnosis of young-onset dementia. *The Lancet. Neurology*, *9*(8), 793–806. [https://doi.org/10.1016/S1474-4422(10)70159-9](https://doi.org/10.1016/S1474-4422%2810%2970159-9)

**Royal College of Psychiatrists.** (2022). *Quality Standards for Memory Services.* [https://www.rcpsych.ac.uk/docs/default-source/improving-care/ccqi/quality-networks/memory-clinics-msnap/msnap-standards---8th-edition-(2022).pdf?sfvrsn=d8341549\_2](https://www.rcpsych.ac.uk/docs/default-source/improving-care/ccqi/quality-networks/memory-clinics-msnap/msnap-standards---8th-edition-%282022%29.pdf?sfvrsn=d8341549_2)

**Salkovskis, P. M., & Warwick, H. M.** (1986). Morbid preoccupations, health anxiety and reassurance: a cognitive-behavioural approach to hypochondriasis. *Behaviour Research and Therapy, 24*(5), 597–602. [https://doi.org/10.1016/0005-7967(86)90041-0](https://doi.org/10.1016/0005-7967%2886%2990041-0)

**Salkovskis, P. M., Rimes, K. A., Warwick, H. M. C., & Clark, D. (2002).** The Health Anxiety Inventory: development and validation of scales for the measurement of health anxiety and hypochondriasis. *Psychological Medicine*, *32*(5), 843-853.

**Schmidtke, K.** (1995). Funktionelle Gedächtnisstörungen. Eine Untersuchung an 25 Patienten [Functional memory disorders. A study of 25 patients]. *Der Nervenarzt, 66*(5), 338–346.

**Schmidtke, K., Pohlmann, S., & Metternich, B.** (2008). The syndrome of functional memory disorder: definition, etiology, and natural course. *The American journal of geriatric psychiatry: official journal of the American Association for Geriatric Psychiatry, 16*(12), 981–988. <https://doi.org/10.1097/JGP.0b013e318187ddf9>

**Steinberg, S. I., Negash, S., Sammel, M. D., Bogner, H., Harel, B. T., Livney, M. G., McCoubrey, H., Wolk, D. A., Kling, M. A., & Arnold, S. E.** (2013). Subjective memory complaints, cognitive performance, and psychological factors in healthy older adults. *American journal of Alzheimer's disease and other dementias, 28*(8), 776–783. <https://doi.org/10.1177/1533317513504817>

**Stone, J., & Evans, R. W.** (2011). Functional/psychogenic neurological symptoms and headache. *Headache, 51*(5), 781–788. <https://doi.org/10.1111/j.1526-4610.2011.01896.x>

**Stone, J., Carson, A., & Sharpe, M.** (2005). Functional symptoms and signs in neurology: assessment and diagnosis. *Journal of Neurology, Neurosurgery & Psychiatry, 76 Suppl 1*(Suppl 1), i2–i12. <https://doi.org/10.1136/jnnp.2004.061655>

**Stuhlmiller, C., Tolchard, B., Thomas, L. J., de Crespigny, C. S., Kalucy, R. S., & King, D.** (2004). Increasing confidence of emergency department staff in responding to mental health issues: an educational initiative. *Australian Emergency Nursing Journal, 7*(1), 9–17. [https://doi.org/10.1016/S1328-2743(03)80073-1](https://doi.org/10.1016/S1328-2743%2803%2980073-1)

**Tyrer, P., Cooper, S., Crawford, M., Dupont, S., Green, J., Murphy, D., Salkovskis, P., Smith, G., Wang, D., Bhogal, S., Keeling, M., Loebenberg, G., Seivewright, R., Walker, G., Cooper, F., Evered, R., Kings, S., Kramo, K., McNulty, A., Nagar, J., … Tyrer, H.** (2011). Prevalence of health anxiety problems in medical clinics. *Journal of psychosomatic research, 71*(6), 392–394. <https://doi.org/10.1016/j.jpsychores.2011.07.004>

**Tyrer, P., Cooper, S., Salkovskis, P., Tyrer, H., Crawford, M., Byford, S., Dupont, S., Finnis, S., Green, J., McLaren, E., Murphy, D., Reid, S., Smith, G., Wang, D., Warwick, H., Petkova., H., & Barrett, B.** (2014). Clinical and cost-effectiveness of cognitive behaviour therapy for health anxiety in medical patients: a multicentre randomised controlled trial. *The Lancet, 883*(9913), 219–225. [https://doi.org/10.1016/S0140-6736(13)61905-4](https://doi.org/10.1016/S0140-6736%2813%2961905-4)

**Vasterling, J. J., Brailey, K., Constans, J. I., & Sutker, P. B.** (1998). Attention and memory dysfunction in posttraumatic stress disorder. *Neuropsychology, 12*(1), 125–133. <https://doi.org/10.1037//0894-4105.12.1.125>

**Verhaak, P. F., Meijer, S. A., Visser, A. P., & Wolters, G.** (2006). Persistent presentation of medically unexplained symptoms in general practice. *Family Practice, 23*(4), 414–420. <https://doi.org/10.1093/fampra/cml016>

**Ziarnik, J. P. & Bernstein, G. S.** (1982). A critical examination of the effect of in‐service training on staff performance. *Mental Retardation, 20*(3), 109–114.

**Table 1**

*Descriptive and Inferential statistics of pre-workshop (Pre-W) and post-workshop (Post-W) ratings (N = 32)*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Questionnaire item | Pre-W *M* (*SD*)  | Pre-W *Mdn*  | Post-W *M* (*SD*)  | Post-W *Mdn*  | *W*  | *z*  | *r*  | *p*  |
| 1. Knowledge of health anxiety  | 3.47 (.761)  | 3.5 | 4.41 (.665)  | 4.5 | 7.5 | -3.995  | 0.499  | < 0.01\*  |
| 2. Confidence in identifying those with health anxiety  | 3.72 (.634)  | 4 | 4.19 (.471)  | 4 | 6 | -3.095  | 0.387  | < 0.01\*  |
| 3. Usefulness of reassurance  | 3.5 (1.136)  | 3 | 2.91 (1.174)  | 3 | 22 | -2.895  | -0.362  | < 0.01\*  |
| 4. Confidence in sharing a symptomatic diagnosis  | 3.63 (.942)  | 4 | 4.06 (.619)  | 4 | 36 | -2.599  | -0.325  | < 0.01\*  |
| 5. Confidence in signposting  | 3.63 (.793)  | 4 | 4.19 (.592)  | 4 | 19.5 | -2.990  | -0.374  | < 0.01\*  |

*Note. M* = Mean; *Mdn* = Median; \* = statistically significant difference.